

## Application of the Name *Goniophlebium* and a New Subgeneric Name in *Polypodium*

DAVID B. LELLINGER

Department of Botany, National Museum of Natural History, Smithsonian Institution,  
Washington, DC 20560

In publishing the new generic name *Goniophlebium*, K. Presl (1836, pp. 185–186) provided a description based on five New World species, which he transferred to his genus. He also included the apparent synonym “*Polypodium spuriorum* sectio 1, *Goniophlebium*. Blume,” which was based on three Old World species. (On examining Blume’s work (1830, p. 132), one finds this “section” to be a rankless name, but one valid under Art. 35.2 and so available for transfer.) He also transferred each of Blume’s species with a query.

Presl’s concept clearly applied to American material, for he saw no Asiatic material and he included Blume’s name and species only “ex auctoritate clar. Blume . . .” It is very likely that Presl intended to establish a name independent of Blume’s, as the preponderance of evidence indicates: American species described and transferred without doubt, Asiatic species not described, transferred with doubt, and only on the authority of Blume. J. Smith (1841, p. 56; 1875, p. 92) recognized the difference between New World and the Old World species. He mentioned their articulate pinnae and proposed that they be placed in *Goniophlebium* sect. *Schellolepis* or in *Schellolepis*. Pichi Sermolli (1973, pp. 465–468) agreed with that disposition, chose one of Presl’s American species as lectotype, and cited the genus as *Goniophlebium* K. Presl.

Had Presl excluded Blume’s name (by not citing it) or Blume’s species (by placing them in another genus), there would be no problem in considering Presl’s name to be independent of Blume’s. However, according to the present Code (Arts. 48.1, 63.2), by including Blume’s name and his species – even with doubt – it is mandatory to base Presl’s name on Blume’s, to choose a lectotype from among Blume’s species, and to cite the genus as *Goniophlebium* (Blume) K. Presl, as Rödl-Linder et al. (1990, p. 105) recently did. Only an act of conservation can override this disposition.

In my opinion, the American species are different from the Asiatic ones, most notably in lacking articulate pinnae and in having sori in several series, as well as in a single series. These species seem best retained in a subgenus of *Polypodium* (Lellinger, 1981, p. 93). Hennipman, Veldhoen and Kramer (1990, pp. 205–206, 224–225) held the same viewpoint; they pointed out several hybrids that occur between the subgenera of American *Polypodium*. In addition, they illustrated dissected lamina scales and paraphyses of *Polypodium* (*Goniophlebium*) *verrucosum* (Hook.) J. Smith, neither of which I have observed in New World species, whose laminae are rarely pilosulous and perhaps never paleaceous or paraphysate.

Because the names *Goniophlebium* (Blume) K. Presl and *Polypodium* subg. *Goniophlebium* (Blume) C. Chr. must be applied to Old World material that is not clearly allied to material from the New World, the New World subgenus traditionally called *Polypodium* subg. *Goniophlebium* requires a new name:

*Polypodium* subg. **Polygoniophlebium** Lellinger, subg. nov.

Rhizoma late repens, frondibus distantibus; laminae pinnatae pinnatisectae vel pinnati-

fidae, pinnis non articulatis, pinna terminalis conformis vel apice laminae pinnatifido; areolae fertilia in seriebus (1)2–5(8) dispositae; venae primariae pinnatae parallelae; venae secundariae angularae, venulis inclusis simplicibus excurrentibusque.

TYPE: *Polypodium fraxinifolium* Jacq. (*Polypodium articulatum* Desv. and *P. rhizocaulon* Willd., two of Presl's original species, are synonyms of *P. fraxinifolium*.)

The species of sect. *Polygoniophlebium* are by no means uniform. The type species, along with species such as *P. adnatum* Kunze and *P. giganteum* Desv., have long rhizomes with appressed scales, large, pinnate laminae, and sori typically in 3–6 series. Similarly large plants with shorter rhizomes, pinnatifid or pinnatisect laminae (at least toward the apex), and sori typically in 1–4(5) series include *P. attenuatum* Humb. & Bonpl. ex Willd., *P. kuhnii* Fourn., and *P. triseriale* Swartz. One small and apparently isolated group of species has short rhizomes and dark-green laminae with one row of slightly elongate sori; it includes *P. plectolepidioides* Rosenst. and *P. rhachypterygium* Liebm. Two groups have smaller, mostly pinnatifid laminae with a single row or rarely two rows of sori on each side of the costa. Those with very long-creeping rhizomes and usually appressed scales include *P. loriceum* L., *P. catharinae* Langsd. & Fisch., *P. maritimum* Hieron., and *P. ptilorhizon* Christ. Those with shorter rhizomes and spreading scales include *P. dissimile* L., *P. plesiosorum* Kunze, and *P. wagneri* Mett. *Polypodium sessilifolium* Desv. is similar, but is fully pinnate.

#### LITERATURE CITED

- BLUME, C. L. 1828–51. *Flora Javae*. J. Frank, Brussels.
- HENNIPMAN E., P. VELDHOEN & K. U. KRAMER. 1990. *Polypodiaceae* in K. U. Kramer & P. S. Green (eds.), *The Families and Genera of Vascular Plants, I. Pteridophytes and Gymnosperms*. Springer-Verlag, Berlin.
- LELLINGER D. B. 1981. Notes on North American ferns. *Amer. Fern J.* 71:90–94.
- PICHI SERMOLLI, R. E. G. 1973. *Fragmenta Pteridologiae* – IV. *Webbia* 27:445–477.
- PRESL, K. 1836. *Tentamen Pteridographiae*. T. Haase, Prague.
- RÖDL-LINDER G., G. ZIJLSTRA & R. TRYON. 1990. Designation of a new lectotype for *Goniophlebium* (Blume) Presl (*Polypodiaceae*). *Taxon* 39:105.
- SMITH, J. 1841. An arrangement and definition of the genera of ferns, with observations on the affinities of each genus. *J. Bot. (Hooker)* 4:38–70.
- \_\_\_\_\_. 1875. *Historia Filicum*. Macmillan, London.